April 17, 1845.

Sir JAMES CLARK ROSS, V.P., in the Chair.

"Description of a Self-registering Thermometer." By Mr. Mansfield Harrison. Communicated by James Alderson, M.D., F.R.S.

The instrument here described is composed of two parallel bars, the one of iron and the other of copper, united at their lower end, and registering their differences of expansion by heat, by means of a series of multiplying levers, carrying a pencil which is made to press on paper wound round a cylinder moved by clock-work.

"On the Viscous Theory of Glacier Motion. Part I. containing Experiments on the Flow of Plastic Bodies, and Observations on the Phenomena of Lava Streams." By James D. Forbes, Esq., F.R.S. Lond. and Edin., Corresponding Member of the Institute of France, and Professor of Natural Philosophy in the University of Edinburgh.

The author adduces some new experiments in confirmation of his theory of the nature and causes of the motion of glaciers, and which present an analogy with the phenomena exhibited by the flow of masses of semifluid or viscous matter contained in a narrow channel, along which they move by the force of gravity; and also with the ripple marks on the surface of a stream of water when its course is impeded by obstacles. These latter phenomena, he remarks, were noticed and accurately described by Leonardo da Vinci. Analogies of a still more striking nature are presented by the appearance of streams of lava in their flow from volcanos and in the progress of their descent, which illustrate a great number of the phenomena of glacier motion, and corroborate the views of the author as to their nature and as to the laws they obey. Various quotations are given from authors who have been struck with this analogy, and who have pointed it out more or less circumstantially in the narratives of their travels in the neighbourhood of Etna and Vesuvius; to which the author adds some of his own observations on the lava from these mountains, which throw further light on the subject.